

**WE CLAIM:**

1. A method for mixing and processing a sample in a specimen container having a cover and a dispersing element in the specimen container, the sample including particulate matter in a fluid, characterized in that the dispersing element is fixed relative to the cover, and the cover is rotatable relative to the specimen container, the method comprising:

placing the specimen container in a receptacle on a mixer apparatus;

engaging the cover for relative rotation with respect to the specimen container;

activating the mixer apparatus so that the specimen container is rotated in relation to the cover, whereby the particulate matter is dispersed throughout the sample by the relatively rotating dispersing element;

deactivating the mixer;

drawing the sample containing dispersed particulate matter through a filter assembly located in a housing atop the cover, whereby the particulate matter is captured in a substantially uniform layer on a collection surface;

opening the housing to expose the layer of particulate matter on the collection surface; and

placing the exposed layer of particulate matter in contact with a microscope slide whereby the captured particulate matter is transferred from the collection site to the microscope slide.

2. The method according to claim 1, wherein the cover includes a first portion rotatable with respect to the specimen container, a second portion fixable with respect to the specimen container, and a frangible seal between the first portion and the second portion, the method further comprising the step of breaking said seal before placing the specimen container in the receptacle so that said first and second portions can rotate relative to one another.

3. The method according to claim 1 or claim 2, wherein the cover includes a pump in fluid communication with the sample in the specimen container, and the step of

drawing the sample containing dispersed particulate matter through the filter assembly comprises activating the pump to create a suction in the specimen container.

4. The method according to claim 3, wherein the pump includes a syringe, and the step of drawing the sample comprises pulling the plunger of the syringe.

5. The method according to any one of claims 1-4, further comprising: removing the specimen container and the cover from the mixer after deactivating the mixer.

6. The method according to claim 1, further comprising:  
replacing the filter assembly with a second filter assembly;  
drawing the sample containing dispersed particulate matter through the second filter assembly, whereby the particulate matter is captured on a second collection surface; and  
placing the second collection site in contact with a second microscope slide whereby the captured particulate matter is transferred from the second collection site to the second microscope slide.

7. The method according to any one of claims 1-6, further comprising:  
fixing the captured particulate matter to the microscope slide.